

degrading enzymes, pectinesterases, pectin lyases, phytases, polygalacturonases, proteases, rhamnogalacturonases, rhamnogalacturonan acetyl esterases, rhamnogalacturonan-alpha-rhamnosidase, xylan acetyl esterases, and xylosidases.

57. The animal feed composition of claim 54, wherein the xylanase is derived from a thermophilic fungus.

58. The animal feed composition of claim 57, wherein the thermophilic fungus is selected from the group consisting of *Byssoschlamus*, *Chaetomium*, *Humicola*, *Malbranchea*, *Mucor*, *Myceliophthora*, *Paecilomyces*, *Talaromyces*, *Thermoascus*, *Thermomyces* and *Thielavia*.

59. The animal feed composition of claim 57, wherein the thermophilic fungus is a *Pyrenomyces*.

60. The animal feed composition of claim 57, wherein the thermophilic fungus is a *Plectomyces*.

61. The animal feed composition of claim 57, wherein the thermophilic fungus is an *Erotiales*.

62. The animal feed composition of claim 54, wherein the xylanase is encoded by a DNA sequence that hybridizes with nucleotides 31-705 of SEQ ID NO: 1 under hybridization conditions comprising hybridization in 5XSSC at 45°C and washing in 2XSSC, 0.2% SDS at 70°C.

63. The animal feed composition of claim 62, wherein the xylanase is encoded by a DNA sequence that hybridizes with nucleotides 31-705 of SEQ ID NO: 1 under hybridization conditions comprising hybridization in 5XSSC at 45°C and washing in 2XSSC, 0.2% SDS at 75°C.

64. The animal feed composition of claim 63, wherein the xylanase is encoded by a DNA sequence that hybridizes with nucleotides 31-705 of SEQ ID NO: 1 under hybridization conditions comprising hybridization in 5XSSC at 45°C and washing in 2XSSC, 0.2% SDS at 80°C.

65. The animal feed composition of claim 54, wherein the xylanase comprises an amino acid sequence having at least 95% identity to the amino acid sequence of SEQ ID NO: 2.

66. The animal feed composition of claim 65, wherein the xylanase comprises a sequence of amino acids 32-225 of SEQ ID NO: 2.

67. The animal feed composition of claim 66, wherein the xylanase comprises an amino acid sequence of SEQ ID NO: 2.

68. The animal feed composition of claim 66, wherein the xylanase consists of a sequence of amino acids 32-225 of SEQ ID NO: 2.

69. The animal feed composition of claim 66, wherein the xylanase consists of an amino acid sequence of SEQ ID NO: 2.

70. The animal feed composition of claim 54, wherein the xylanase is a monocomponent xylanase.